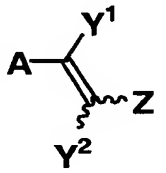
Claims

1. A method for stabilization of a diarylvinylene compound or a pharmaceutically acceptable salt thereof in a solid formulation containing the diarylvinylene compound or the pharmaceutically acceptable salt thereof, which comprises allowing an inorganic substance and/or a colorant to exist in the solid formulation.

2. The method for stabilization according to claim 1, wherein the method for stabilization is a method of suppressing dimerization of the diarylvinylene compound or the pharmaceutically acceptable salt thereof.

3. The method for stabilization according to claim 1 or 2, wherein the method for stabilization is a method of suppressing isomerization of the diarylvinylene compound or the pharmaceutically acceptable salt thereof.

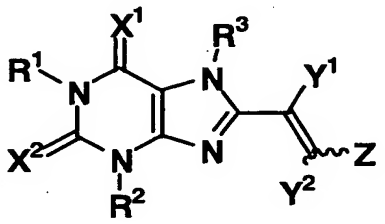
4. The method for stabilization according to any one of claims 1 to 3, wherein the diarylvinylene compound is a compound represented by formula (I).



(I)

(wherein Y^1 and Y^2 may be the same or different and each represents a hydrogen atom, halogen or lower alkyl; and Z and A may be the same or different and each represents substituted or unsubstituted aryl, or substituted or unsubstituted heteroaryl).

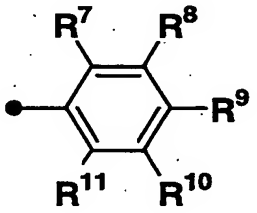
5. The method for stabilization according to any one of claims 1 to 3, wherein the diarylvinylene compound is a xanthine derivative represented by formula (IA)



(IA)

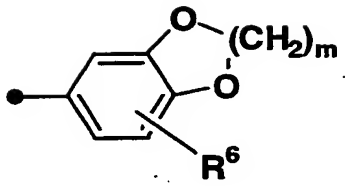
(wherein Y^1, Y^2 and Z have the same meanings as defined above, respectively; R^1, R^2 and R^3 may be the same or different and each represents a hydrogen atom, lower alkyl, lower alkenyl or lower alkynyl; and X^1 and X^2 may be the same or different and each represents an oxygen atom or a sulfur atom).

6. The method for stabilization according to claim 5, wherein Y^1 and Y^2 each are a hydrogen atom; X^1 and X^2 each are an oxygen atom; R^1, R^2 and R^3 may be the same or different and each is a hydrogen atom or lower alkyl; and Z is formula (II)



(II)

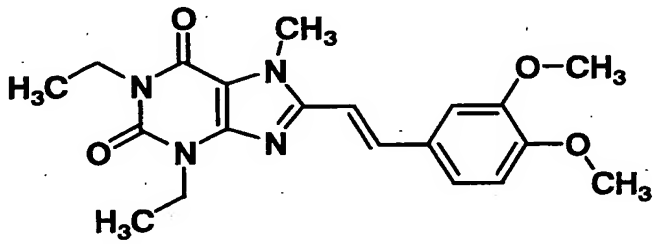
(wherein R^7, R^8, R^9, R^{10} and R^{11} may be the same or different and each represents a hydrogen atom, lower alkyl or lower alkoxy) or formula (III)



(III)

(wherein R^6 reprsnts a hydrogen atom, hydroxy, lower alkyl, lower alkoxy, halogen, nitro or amino; and m represents an integer of 1 to 3).

7. The method for stabilization according to any one of claims 1 to 3, wherein the diarylvinylene compound is (E)-8-(3,4-dimethoxystyryl)-1,3-diethyl-7-methyl-3,7-dihydro-1H-purine-2,6-dione represented by formula (IB).



(IB)

8. The method for stabilization according to any one of claims 1 to 7, wherein a form of the solid formulation is a form in which a core containing the diarylvinylene compound or the pharmaceutically acceptable salt thereof is coated with a coated layer.

9. The method for stabilization according to the claim 8, wherein an inorganic substance and/or a colorant are/is allowed to exist in the coated layer.

10. The method for stabilization according to any one of claims 1 to 9, wherein 0.001 to 10,000 part(s) by weight of the inorganic substance and/or 0.001 to 10,000 part(s) by weight of

the colorant per 100 parts by weight of the diarylvinylene compound or the pharmaceutically acceptable salt thereof are/is allowed to exist.

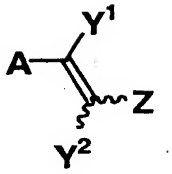
11. The method for stabilization according to claim 9, wherein 0.01 to 90 part(s) by weight of the inorganic substance and/or 0.01 to 70 part(s) by weight of the colorant per 100 parts by weight of the coated layer are/is allowed to exist, and wherein the total amount of the inorganic substance and the colorant is 0.01 to 90 part(s) by weight per 100 parts by weight of the coated layer.

12. The method for stabilization according to any one of claims 1 to 11, wherein the inorganic substance is one or more inorganic substance(s) selected from the group consisting of titanium oxide, zinc oxide, magnesium oxide, talc, magnesium silicate, synthetic aluminum silicate, magnesium carbonate, calcium sulfate, aluminum sulfate and barium sulfate.

13. The method for stabilization according to any one of claims 1 to 12, wherein the colorant is iron oxide.

14. An agent for suppressing dimerization of a diarylvinylene compound or a pharmaceutically acceptable salt thereof, which comprises an inorganic substance and/or a colorant.

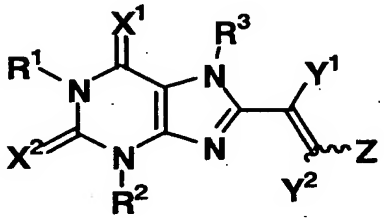
15. The agent for suppressing dimerization according to claim 14, wherein the diarylvinylene compound is a compound represented by formula (I)



(I)

(wherein Y^1, Y^2, Z and A have the same meanings as defined above, respectively).

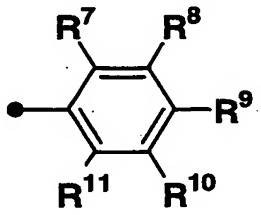
16. The agent for suppressing dimerization according to claim 14, wherein the diarylvinylene compound is a xanthine derivative represented by formula (IA)



(IA)

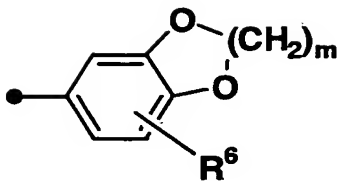
(wherein Y^1, Y^2, X^1, X^2, R^1, R^2, R^3 and Z have the same meanings as defined above, respectively).

17. The agent for suppressing dimerization according to claim 16, wherein Y^1 and Y^2 each are a hydrogen atom, X^1 and X^2 each are an oxygen atom; R^1, R^2 and R^3 may be the same or different and each is a hydrogen atom or lower alkyl; and Z is formula (II)



(II)

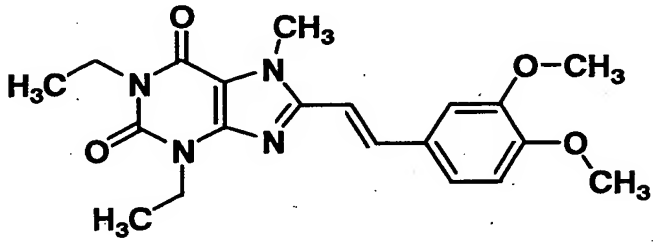
(wherein R^7, R^8, R^9, R^{10} and R^{11} have the same meanings as defined above, respectively) or formula (III)



(III)

(wherein R^6 and m have the same meanings as defined above, respectively).

18. The agent for suppressing dimerization according to claim 14, wherein the diarylvinylene compound is (E)-8-(3,4-dimethoxystyryl)-1,3-diethyl-7-methyl-3,7-dihydro-1H-purine-2,6-dione represented by formula (IB).

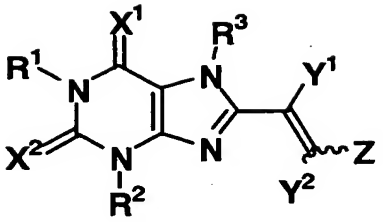


(IB)

19. The agent for suppressing dimerization according to any one of claims 14 to 18, wherein the inorganic substance is one or more inorganic substance(s) selected from the group consisting of titanium oxide, zinc oxide, magnesium oxide, talc, magnesium silicate, synthetic aluminum silicate, magnesium carbonate, calcium sulfate, aluminum sulfate and barium sulfate.

20. The agent for suppressing dimerization according to any one of claims 14 to 19, wherein the colorant is iron oxide.

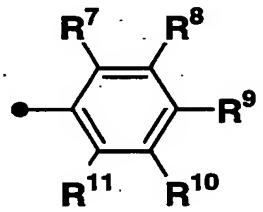
21. A solid formulation comprising a xanthine derivative represented by formula (IA)



(IA)

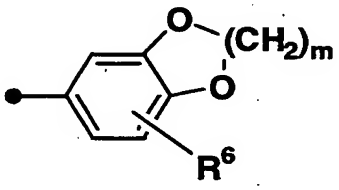
(wherein Y^1, Y^2, X^1, X^2, R^1, R^2, R^3 and Z have the same meanings as defined above, respectively) or a pharmaceutically acceptable salt, and an inorganic substance and/or a colorant.

22. The solid formulation according to claim 21, wherein Y^1 and Y^2 each are a hydrogen atom; X^1 and X^2 each are an oxygen atom; R^1, R^2 and R^3 may be the same or different and each is a hydrogen atom or lower alkyl; and Z is formula (II)



(II)

(wherein R^7, R^8, R^9, R^{10} and R^{11} have the same meanings as defined above, respectively) or formula (III)

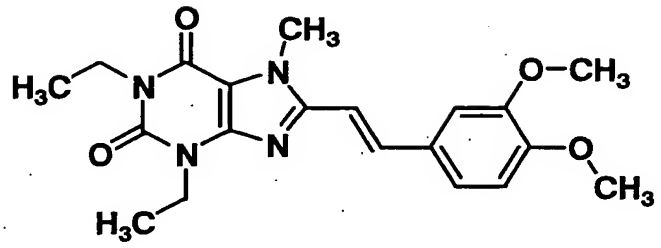


(III)

(wherein R^6 and m have the same meanings as defined above, respectively).

23. The solid formulation according to claim 21, wherein the xanthine derivative is (E)-8-(3,4-dimethoxystyryl)-1,3-diethyl-7-methyl-3,7-dihydro-

1H-purine-2,6-dione represented by formula (IB).



(IB)

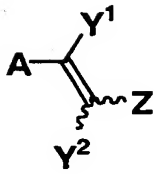
24. The solid formulation according to any one of claims 21 to 23, wherein a form of the solid formulation is a form in which a core containing the xanthine derivative or the pharmaceutically acceptable salt thereof is coated with a coated layer containing an inorganic substance and/or an colorant.

25. The solid formulation according to any one of claims 21 to 24, wherein the inorganic substance is one or more inorganic substance(s) selected from the group consisting of titanium oxide, zinc oxide, magnesium oxide, talc, magnesium silicate, synthetic aluminum silicate, magnesium carbonate, calcium sulfate, aluminum sulfate and barium sulfate.

26. The solid formulation according to any one of claims 21 to 25, wherein the colorant is iron oxide.

27. Use of an inorganic substance and/or a colorant as an agent for suppressing dimerization of a diarylvinylene compound or a pharmaceutically acceptable salt thereof.

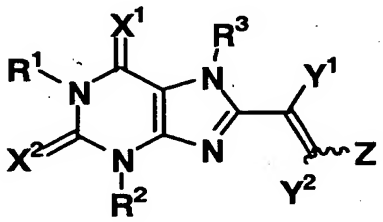
28. The use according to claim 27, wherein the diarylvinylene compound is a compound represented by formula (I)



(I)

(wherein Y^1, Y^2, Z and A have the same meanings as defined above, respectively).

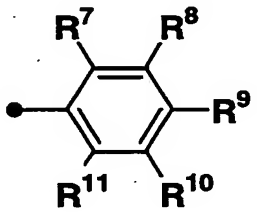
29. The use according to claim 27, wherein the diarylvinylene compound is a compound represented by formula (IA)



(IA)

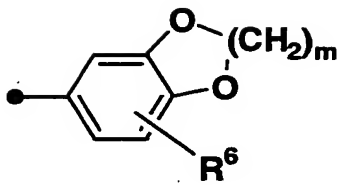
(wherein Y^1, Y^2, X^1, X^2, R^1, R^2, R^3 and Z have the same meanings as defined above, respectively).

30. The use according to claim 29, wherein Y^1 and Y^2 each are a hydrogen atom; X^1 and X^2 each are an oxygen atom; R^1, R^2 and R^3 may be the same or different and each is a hydrogen atom or lower alkyl; and Z is formula (II)



(II)

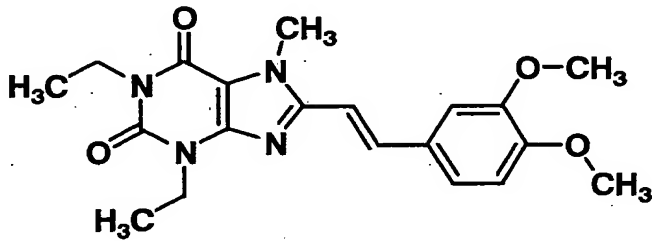
(wherein R^7, R^8, R^9, R^{10} and R^{11} have the same meanings as defined above, respectively) or formula (III)



(III)

(wherein R^6 and m have the same meanings as defined above, respectively).

31. The use according to claim 27, wherein the diarylvinylene compound is (E)-8-(3,4-dimethoxystyryl)-1,3-diethyl-7-methyl-3,7-dihydro-1H-purine-2,6-dione represented by formula (IB).



(IB)

32. The use according to any one of claims 27 to 31, wherein the inorganic substance is one or more inorganic substance(s) selected from the group consisting of titanium oxide, zinc oxide, magnesium oxide, talc, magnesium silicate, synthetic aluminum silicate, magnesium carbonate, calcium sulfate, aluminum sulfate and barium sulfate.

33. The use according to any one of claims 27 to 32, wherein the colorant is iron oxide.